Fruits and Vegetables: A Survey of Ohio Fruit and Vegetable Producers and Market Operators

SUMMARIZED RESULTS
Apple Businesses Only

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Survey Results

Dear Apple Business Owner:

As you may recall, the Department of Agricultural Economics at The Ohio State University conducted a statewide survey of fruit and vegetable businesses in March, 1991. A random sample of 992 businesses were surveyed and 304 of these businesses returned completed survey questionnaires. Ninety of these 304 businesses listed apples as their primary commodity. Because you are included in this group of 90, we are providing you a copy of the summarized results for apple businesses.

Because of the time lag between your survey response and these summarized results, we have included a copy of the original survey to refresh your memory. We thank you for your participation and we hope these summarized results provide you a better understanding of apple businesses in the state of Ohio. Some limited socioeconomic information about the survey participants is provided below. Most of the results are presented in the form of tables.

A brief comparison of apple businesses with all fruit and vegetable businesses is shown in the first table. Apple businesses tended to be involved in both production and marketing to a larger extent (84%) than did the broader group of all fruit and vegetable businesses (67%). The first table also shows that apple producers marketed a large percentage of their apples through direct marketing outlets (pick-your-own, roadside markets, etc.). These outlets were chosen, of course, because producers found them to be most profitable (see responses to A-3).

Approximately 39 percent of the owners of Ohio apple businesses had obtained a college education and nearly all owners (92%) had a high school education. Age ranged from 28 to 86 years, with the average age being 56 years. Two-thirds of the owners worked solely in the apple business, while the remaining one-third worked either seasonally or year-round outside the business. These numbers are also descriptive of those found for all fruit and vegetable businesses. Many spouses worked in the apple businesses, but to a lesser extent than the male respondents who completed the survey. Five of the 90 respondents completing the survey were women.

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A-1. Which of the following best describes your business?

	All Fruit and Vegetable Businessses		Apple Businesses	
	N	%	N	%
PRODUCER MAINLY	59	19.9	6	6.7
PRODUCER AND MARKETER	199	67.0	75	84.3
MARKETER MAINLY	35	11.8	8	9.0
OTHER	4	1.3	0	0.0
Total	297	100.0	89	100.0
	FREQUENCY MISSING = 1		FREQUENCY MISSING = 1	

As the above data shows, Ohio apple businesses are involved in both production and marketing to a larger extent (84%) than that of the larger fruit and vegetable industry (67%). Much of this difference is reflected in the producer only category. Whereas 20% of all fruit and vegetable businesses are mainly production oriented, only 6.7 % of apple businesses are similarly classified. Of course, apples can be marketed directly more easily than some of the other commodities such as grapes, sweet corn and tomatoes. One business failed to provide its classification.

A-2. What percent of your commodities are sold through each of these outlets?

TYPE OF MARKET	N	MEAN	STD DEV	MINIMUM	MAXIMUM
PICK-YOUR-OWN	87	18.12	31.49	0	100
ROADSIDE MARKET	87	46.93	40.72	0	100
WHOLESALERS/DISTRIBUTORS	87	15.93	27.5	0	90
RETAIL FARM MARKETS	87	7.84	21.58	0	100
OTHER RETAILERS	87	6.21	20.42	0	100
RESTAURANTS	87	1.87	11.96	0	100
OTHERS	83	4.51	15.10	0	100

As the data above show, Ohio apple producers marketed an average of 18.12% of their apples through Pick-Your-Own; 46.93% through Roadside Markets; 15.93% through Wholesalers/Distributors; 7.84% through Other Retailers; 1.87% through Restaurants; and 4.51% through other outlets. A better description of the marketing methods for apple businesses is provided in the next table.

Distribution of Sales for all Apple Businesses (Percent).
(Detailed Responses to question A-2).

PYO = PICK-YOUR-OWN
RM = ROADSIDE MARKET
WSD = WHOLESALER/RETAILERS
RFM = RETAIL FARM MARKET
OR = OTHER RETAILERS
RST = RESTAURANTS

Response Number	Marketing Outlet						
	PYO	RM	WSD	RFM	OR	RST	OTS
1	20	80	0	0	0	0	0
2	35	55	0	0	0	10	0
3	1	0	84	15	0	0	0
4	0	100	0	0	0	0	0
5	0	100	0	0	0	0	0
6	0	100	0	0	0	0	0
7	0	10	90	0	0	0	0
8	0	75	25	0	0	0	0
9	0	100	0	0	0	0	0
10	0	90	10	0	0	0	0
11	0	100	0	0	0	0	0
12	0	100	0	0	0	0	0
13	0	10	90	0	0	0	0
14	100	0	0	0	0	0	0
15	0	33	33	10	20	3	
16	2.5	0	70	27.5	0	0	0
17	0	0	0	0	95	0	5
18	0	100	0	0	0	0	0
19	0	100	0	0	0	0	0
20	.	.	.	.	.	.	
21	0	90	10	0	0	0	0
22	0	100	0	0	0	0	0
23	75	0	0	0	0	0	25
24	10	10	80	0	0	0	.
25	2	60	0	38	0	0	0
26	100	0	0	0	0	0	0
27	0	100	0	0	0	0	0
28	0	100	0	0	0	0	0
29	10	50	40	0	0	0	0
30	0	0	0	0	0	0	100
31	100	0	0	0	0	0	0
32	0	95	5	0	0	0	
33	0	100	0	0	0	0	0
34	0	100	0	0	0	0	0
35	0	0	0	0	100	0	0
36	0	10	90	0	0	0	0
37	0	0	0	100	0	0	0
38	40	60	0	0	0	0	0
39	80	10	10	0	0	0	0
40	5	90	5	0	0	0	0
41	9	90	0	0	1	0	0
42	0	0	87	13	0	0	0
43	0	100	0	0	0	0	0
44	0	40	60	0	0	0	0
45	19	30	18	3	13	0	17
46	10	15	50	10	15	0	0
47	0	95	5	0	0	0	0
48	0	25	75	0	0	0	0
49	0	95	5	0	0	0	0
50	80	0	0	0	20	0	0
51	40	10	0	0	0	50	0

Response Number	PYO	RM	WSD	RFM	OR	RST	OTS
52	5	95	.	.	.	.	
53	30	0	30	0	0	0	40
54	0	5	0	0	95	0	0
55	5	85	10	0	0	0	0
56	30	70	0	0	0	0	0
57	0	95	5	0	0	0	0
58	100	0	0	0	0	0	0
59	0	40	0	10	30	0	20
60	20	70	0	0	10	0	0
61	0	100	0	0	0	0	0
62	2	.	0	0	0	100	0
63	1	2	0	25	5	0	67
64	30	60	5	0	0	0	5
65	0	0	20	80	0	0	0
66	10	90	0	0	0	0	0
67	0	30	60	10	0	0	0
68	70	25	5	0	0	0	0
69	10	0	0	90	0	0	0
70	20	20	40	20	0	0	0
71	0	0	0	90	10	0	0
72	0	50	40	10	0	0	0
73	0	10	0	0	90	0	0
74	5	40	0	5	10	0	40
75	0	10	70	0	0	0	30
76	60	20	20	0	0	0	0
77	80	20	0	0	0	0	0
78	25	5	70	0	0	0	0
79	0	95	0	0	0	0	5
80	0	88	2	10	0	0	0
81	0	80	0	0	0	0	20
82	0	30	50	20	0	0	0
83	100	0	0	0	0	0	0
84	10	75	7	6	1	0	
85	100	0	0	0	0	0	0
86	100	0	0	0	0	0	0
87	20	70	10	0	0	0	0
88	5	5	0	90	0	0	0
89	5	70	0	0	25	0	0

The preceeding data show the distribution of apples through the various outlets. As the data show, several producers used many outlets. It is also apparent from the data that a number of producers used a single outlet to market their apples. Indeed 15 producers marketed all of their apples through Roadside Markets.

A-3. If you use more than one of the above markets, please enter the number for the one which is most profitable per unit sold.

	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
PICK-YOUR-OWN	11	19.0	11	19.0
ROADSIDE MARKET	36	62.1	47	81.1
WHOLESALERS/DISTRIBUTORS	1	1.7	48	82.8
RETAIL FARM MARKETS	4	6.9	52	89.7
OTHER RETAILERS	0	0.0	52	89.7
RESTAURANTS	1	1.7	53	91.4
OTHERS	5	8.6	58	100.0

FREQUENCY MISSING = 31

As the above data show, Roadside Markets were considered most profitable by 67% of the businesses. Pick-Your-Own were the second most profitable way to market apples. Few producers selected the remaining marketing methods as most profitable.

LEAST PROFITABLE PER UNIT SOLD

	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
PICK-YOUR-OWN	5	11.6	5	11.6
ROADSIDE MARKET	1	2.3	6	13.9
WHOLESALERS/DISTRIBUTORS	23	53.5	29	67.4
RETAIL FARM MARKETS	2	4.7	31	72.1
OTHER RETAILERS	11	25.6	42	97.7
RESTAURANTS	0	0.0	42	97.7
OTHERS	1	2.3	43	100.0

FREQUENCY MISSING = 46

As contrasted with Roadside Markets being the most profitable way of marketing apples, Wholesalers/Distributors were considered the least profitable way of marketing apples by 53.5% of the businesses.

A-4. During 1990, did you sell any of your commodities as organic?

	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
NO	85	96.6	85	96.6
YES	3	3.4	88	100.0

As the above results show, only 3% of the 88 producers who responded to this question sold some of their apples as organic.

A-5. How would you describe prices received for organic commodities as compared to the same commodities sold through "regular" markets?

Because only 3 producers sold some of their apples as organic during 1990, this question did not generate enough data to make a summary meaningful.

SECTION B: Description of Farming System

Because of very sporadic responses to the questions in Section B-1 through B-9, no summary data are provided for these questions.

B-10. What is your most important crop (largest sales)?

Of the 260 producers who responded to this portion of the survey, 90 of them identified apples as their major crop. Ranking second and third as the most important fruit crop were grapes and strawberries.

COMMODITY	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
CORN	7	2.7	7	2.7
SOYBEANS	11	4.2	18	6.9
HAY-ALFALFA	1	0.4	19	7.3
POTATOES-IRISH	3	1.2	22	8.5
APPLES	90	34.6	112	43.1
BLUEBERRIES	3	1.2	115	44.2
GRAPES	19	7.3	134	51.5
PEACHES	5	1.9	1.9	53.5
RASPBERRIES-BLACK	4	1.5	143	55
RASPBERRIES-RED	2	0.8	145	55.8
STRAWBERRIES	16	6.2	161	61.9
BLACKBERRIES	1	0.4	162	62.3
BEANS-SNAP	4	1.5	166	63.8
CARROTS	1	0.4	167	64.
CORN-INDIAN	1	0.4	168	64.6
CORN-SWEET	33	12.4	201	77.3
LETTUCE	1	0.4	202	77.7
ONIONS	2	0.8	204	78.5
PEPPERS-BELL	4	1.5	208	80
POTATOES-SWEET	6	2.3	214	82.3
PUMPKIN	7	2.7	221	85
RADISH	2	0.8	223	85.8
SQUASH	1	0.4	224	86.2
TOMATOES	20	7.7	244	93.8
WATERMELON	1	0.4	245	94.2
MELONS	3	1.2	248	95.4
CANTALOUPE, MUSKMELON	1	0.4	249	95.8
SQUASH	1	0.4	250	96.2
MAPLE SYRUP	2	0.8	250	96.9
MUSHROOMS	1	0.4	25.	97.3

Table B-10 continued.

WINE	1	0.4	254	97.7
CIDER	2	0.8	256	98.5
SORGHUM SYRUP	1	0.4	257	98.8
CUT FLOWERS	1	0.4	258	99.2
GARDEN MUMS/HARDY MUMS	2	.038	260	100

FREQUENCY MISSING = 38

B-10. Please estimate the per acre cost (1990) for each of the following input categories for the crop listed in B-10. These data are for the 90 businesses indicating apples as their most important crop.

Limestone	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	43	81.1	43	81.1
5	3	5.7	46	86.8
7	1	1.9	47	88.7
10	1	1.9	48	90.6
25	2	3.8	50	94.3
32	1	1.9	51	96.2
40	1	1.9	52	98.1
60	1	1.9	53	100.0

Frequency Missing = 36

Of the 53 producers responding to this question, 43 indicated no cost for Limestone. Ten producers indicated costs ranging from $5 per acre to $60 per acre.

Fertilizer	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	5	10.2	5	10.2
2	1	2.0	6	12.2
5	2	4.1	8	16.3
6	1	2.0	9	18.4
10	7	14.3	16	32.7
12	2	4.1	18	36.7
14	1	2.0	19	38.8
15	2	4.1	21	42.9
16	1	2.0	22	44.9
20	7	14.3	29	59.2
22	1	2.0	30	61.2
25	2	4.1	32	65.3
30	6	12.2	38	77.6
35	1	2.0	39	79.6
40	6	12.2	45	91.8
45	2	4.1	47	95.9
50	1	2.0	48	98.0
65	1	2.0	49	100.0

Frequency Missing = 40

Of the 49 producers responding to this question, 29 had costs of $20 or less per acre. The remaining 20 had costs ranging from $22 per acre to $65 per acre.

Soil Inoculants	Frequency	Percent	Cumulative Frequency	Cumulative Percent

Frequency Missing = 89

No producer indicated any cost for soil inoculants.

Insecticides	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	2	3.6	2	3.6
4	1	1.8	3	5.4
5	1	1.8	4	7.1
7	2	3.6	6	10.7
10	1	1.8	7	12.5
12	1	1.8	8	14.3
15	2	3.6	10	17.9
17	1	1.8	11	19.6
20	1	1.8	12	21.4
24	1	1.8	13	23.2
25	1	1.8	14	25.0
30	2	3.6	16	28.6
35	2	3.6	18	32.1
40	5	8.9	23	41.1
42	1	1.8	24	42.9
45	1	1.8	25	44.6
50	3	5.4	28	50.0
60	4	7.1	32	57.1
67	1	1.8	33	58.9
70	1	1.8	34	60.7
75	1	1.8	35	62.5
80	1	1.8	36	64.3
100	5	8.9	41	73.2
106	1	1.8	42	75.0
110	1	1.8	43	76.8
120	1	1.8	44	78.6
125	1	1.8	45	80.4
140	1	1.8	46	82.1
150	2	3.6	48	85.7
170	1	1.8	49	87.5
217	1	1.8	50	89.3
250	1	1.8	51	91.1
300	1	1.8	52	92.9
350	1	1.8	53	94.6
408	1	1.8	54	96.4
600	1	1.8	55	98.2
3000	1	1.8	56	100.0

Frequency Missing = 33

Of the 56 producers responding to this question, exactly half indicated costs of $50 or less per acre. The remaining half had costs ranging from $60 or less per acre. The remaining half had costs ranging from $60 per acre to $3000 per acre. Note that the $3000 figure is probably for the whole orchard, as opposed to a per acre basis.

Herbicides	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	7	13.2	7	13.2
1	1	1.9	8	15.1
2	1	1.9	9	17.0
5	4	7.5	13	24.5
6	1	1.9	14	26.4
7	1	1.9	15	28.3
7.5	1	1.9	16	30.2
8	1	1.9	17	32.1
10	7	13.2	24	45.3
14	1	1.9	25	47.2
15	3	5.7	28	52.8
18	1	1.9	29	54.7
20	5	9.4	34	64.2
22	1	1.9	35	66.0
25	5	9.4	40	75.5
27	1	1.9	41	77.4
30	1	1.9	42	79.2
43	2	3.8	44	83.0
50	1	1.9	45	84.9
54	1	1.9	46	86.8
60	1	1.9	47	88.7
75	1	1.9	48	90.6
100	1	1.9	49	92.5
125	1	1.9	50	94.3
150	1	1.9	51	96.2
250	1	1.9	52	98.1
500	1	1.9	53	100.0

Frequency Missing = 36

Of the 53 producers responding to this question, 25 had costs of $14 or less per acre. The remaining 28 had costs ranging from $15 per acre to $500 per acre.

Fungicides	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	3	5.5	3	5.5
4	1	1.8	4	7.3
5	1	1.8	5	9.1
10	2	3.6	7	12.7
11.3	1	1.8	8	14.5
12	1	1.8	9	16.4
15	1	1.8	10	18.2
17	1	1.8	11	20.0
18	1	1.8	12	21.8
20	2	3.6	14	25.5
25	1	1.8	15	27.3
30	1	1.8	16	29.1
35	1	1.8	17	30.9
40	1	1.8	18	32.7
41	1	1.8	19	34.5
46	1	1.8	20	36.4
50	6	10.9	26	47.3
60	4	7.3	30	54.5
70	1	1.8	31	56.4
80	1	1.8	32	58.2
83	1	1.8	33	60.0
85	1	1.8	34	61.8
100	7	12.7	41	74.5
106	1	1.8	42	76.4
110	1	1.8	43	78.2
125	2	3.6	45	81.8
150	2	3.6	47	85.5
200	1	1.8	48	87.3
250	2	3.6	50	90.9
387	1	1.8	51	92.7
397	1	1.8	52	94.5
500	2	3.6	54	98.2
1000	1	1.8	55	100.0

Frequency Missing = 34

Of the 55 producers responding to this question, 26 had costs of $50 or less per acre. The remaining 29 had costs ranging from $60 per acre to $1000 per acre. Again, it is quite possible that the individual with costs of $1000 reported on a total acreage basis as opposed to a per acre basis.

Seed	Frequency	Percent	Cumulative Percent	Cumulative Percent
0	27	65.9	27	65.9
5	1	2.4	28	68.3
10	2	4.9	30	73.2
20	2	4.9	32	78.0
30	1	2.4	33	80.5
34	1	2.4	34	82.9
35	1	2.4	35	85.4
40	1	2.4	36	87.8
50	2	4.9	38	92.7
80	1	2.4	39	95.1
100	1	2.4	40	97.6
900	1	2.4	41	100.0

Frequency Missing = 48

Of the 41 producers responding to this question, 27 indicated no cost for seed. The remaining 14 indicated costs ranging from $15 to $900.

Gasoline, Fuel Oil & Lube	Frequency	Percent	Cumulative Percent	Cumulative Percent
0	1	2	1	2.0
3	1	2	2	3.9
4.4	1	2	3	5.9
5	2	3.9	5	9.8
8	1	2	6	11.8
10	5	9.8	11	21.6
14	1	2	12	23.5
15	3	5.9	15	29.4
20	4	7.8	19	37.3
25	1	2	20	39.2
30	4	7.8	24	47.1
35	1	2	25	49.0
39	2	3.9	27	52.9
40	1	2	28	54.9
41	1	2	29	56.9
46	1	2	30	58.8
50	1	2	31	60.8
53	1	2	32	62.7
70	1	2	33	64.7
72	1	2	34	66.7
75	1	2	35	68.6
90	1	2	36	70.6
96	1	2	37	72.5
100	4	7.8	41	80.4
110	2	3.9	43	84.3
115	1	2	44	86.3
154	1	2	45	88.2
175	1	2	46	90.2
180	1	2	47	92.2
500	2	3.9	49	96.1
600	1	2	50	98.0
1000	1	2	51	100.0

Frequency Missing = 38

For the 51 producers responding to this question, costs ranged from $3 over acre to $1000 per acre. Average cost per acre for these 51 producers amounted to $97.

Storage & Drying	Frequency	Percent	Cumulative Percent	Cumulative Percent
0	31	79.5	31	79.5
10	1	2.6	32	82.1
50	2	5.1	34	87.2
75	1	2.6	35	89.7
85	1	2.6	36	92.3
100	1	2.6	37	94.9
150	1	2.6	38	97.4
800	1	2.6	39	100.0

Frequency Missing =50

Of the 42 producers responding to this question, 31 indicated no cost for storage and drying. The other 8 producers indicated costs ranging from $10 to $800. Even though this data were requested on a per acre basis, it is likely that the reported data refer to a different unit of measurement.

Custom work Machine Hire	Frequency	Percent	Cumulative Percent	Cumulative Percent
0	36	85.7	36	85.7
3	1	2.4	37	88.1
20	2	4.8	39	92.9
30	1	2.4	40	95.2
60	1	2.4	41	97.6
200	1	2.4	42	100.0

Frequency Missing = 47

Of the 42 producers responding to this question, 36 indicated no cost for custom work or machine hire. Six other producers reported costs ranging from $3 per acre to $200 per acre.

Repairs & Maintenance	Frequency	Percent	Cumulative Percent	Cumulative Percent
0	5	10	5	10
1	1	2	6	12
3	1	2	7	14
5	1	2	8	16
10	3	6	11	22
15	2	4	13	26
20	7	14	20	40
25	1	2	21	42
30	2	4	23	46
40	2	4	25	50
50	3	6	28	56
73	1	2	29	58
80	2	4	31	62
85	1	2	32	64
90	1	2	33	66
100	4	8	37	74
135	1	2	38	76
150	2	4	40	80
172	1	2	41	82
175	1	2	42	84
200	2	4	44	88
357	1	2	45	90
400	1	2	46	92
483	1	2	47	94
1000	1	2	48	96
3000	2	4	50	100

Frequency Missing = 39

Of the 50 apple businesses responding to this question, 5 indicated no cost for repairs and maintenance. The remaining 45 had costs ranging from $1 to $3000.

Labor Hours (Family & Hired	Frequency	Percent	Cumulative Percent	Cumulative Percent
0	1	2.4	1	2.4
10	1	2.4	2	4.9
20	2	4.9	4	9.8
25	1	2.4	5	12.2
30	1	2.4	6	14.6
40	1	2.4	7	17.1
50	4	9.8	11	26.8
55	1	2.4	12	29.3
65	2	4.9	14	34.1
75	1	2.4	15	36.6
77	1	2.4	16	39.0
93.8	1	2.4	17	41.5
100	2	4.9	19	46.3
150	2	4.9	21	51.2
160	1	2.4	22	53.7
200	3	7.3	25	61.0
223	1	2.4	26	63.4
240	1	2.4	27	65.9
300	2	4.9	29	70.7
330	1	2.4	30	73.2
500	2	4.9	32	78.0
700	1	2.4	33	80.5
932	1	2.4	34	82.9
1000	1	2.4	35	85.4
1125	1	2.4	36	87.8
1500	2	4.9	38	92.7
3000	1	2.4	39	95.1
4080	1	2.4	40	97.6
7000	1	2.4	41	100.0

Frequency Missing = 48

For the 41 businesses listing their labor hours, the range varied from 0 to 7000. About half of the businesses (19) had labor hours of less than 100 hours (avg. = 51 hours) while the other half had labor hours exceeding 100 and averaging 1104.

B-11. Do you have a livestock enterprise on your farm?

As the data below show, only 10% of Ohio's apple businesses responding to the survey have livestock enterprises. This suggests that apple businesses tend not to become involved with enterprises outside of fruits and vegetables.

	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
NO	79	89.9	79	89.8
YES	9	10.2	88	100

FREQUENCY MISSING = 2

B-12. How many animals of the following types did you have last year?

Dairy Cows	:	Only 1 business reported dairy cows.
Beef Cows	:	Six businesses reported beef cows.
Stockers	:	Two producers reported stockers.
Feedlot	:	No producer reported feedlot cattle.
Hogs: sows	:	Two producers reported sows.
feeder pigs	: sold	No producer reported sales of feeder pigs.
market pigs	: sold	Two producers reported sales of market hogs.
Sheep: ewes	:	One producer reported Ewes.
feeder lambs	:	One producer reported feeder lambs.
finished lambs	:	One producer reported finished lambs.
Other		Two producers reported horses and one reported dairy heifers.

B-13. Please indicate your 1990 acreage and average yield of each crop produced.

For the vegetable crops listed, the following responses were provided:

Asparagus	:	3 producers with .5, 1 and 25.
Cucumbers	:	5 producers with .3 acre for two producers; .5, 1 and 25 acres respectively.
Cabbage	:	5 producers with .1, .3, .5, 1 and 20 acres respectively.
Tomatoes	:	6 producers with .1 acre for two producers; .5, .8, 1 and 2 acres respectively.
Squash	:	7 producers with acreage being .1; .5 for two producers; 1, 2, and 10 acres for the others.
Sweet Corn	:	15 producers with acreage ranging from .5 to 80 acres.
Broccoli	:	2 producers with .1 acre and .3 acre respectively.
Eggplant	:	1 producer with .5 acre.
Gourds	:	1 producer with 2 acres.
Bell Peppers	:	1 producer with .5 acre.
Pumpkins	:	1 producer with .5 acre.
Field Corn	:	9 producers with acreage ranging from 3 to 240 acres.
Soybeans	:	7 producers with acreage ranging from 5 to 230 acres.
Wheat	:	3 producers with acreage of 17, 50 and 80 acres respectively.
Alfalfa Hay	:	4 producers with acreage of 8, 20, 25 and 75 acres respectively.
Other Hay	:	1 producer with 100 acres.
Oats	:	1 producer with 6 acres.

As the data in B-13 show, several apple producers are involved in vegetable production as well as field crops. The production level of most of these crops, however, is generally small.

B-14. Please indicate your 1990 production. Specify units (trees, acreage, etc) for this production.

PRODUCTION OF APPLES (BUSHELS)	NO.	TOTAL QUANTITY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
0	1	0	1.4	1	1.4
20	1	20	1.4	2	2.8
30	1	30	1.4	3	4.2
50	2	100	2.8	5	6.9
100	3	300	4.2	8	11.1
125	3	375	4.2	11	15.3
150	1	150	1.4	12	16.7
175	2	350	28.	14	19.4
200	3	600	4.2	17	23.6
250	2	500	2.8	19	26.4
260	1	260	1.4	20	27.8
275	1	275	1.4	21	29.2
350	1	350	1.4	22	30.6
360	1	360	1.4	23	31.9
400	1	400	1.4	24	33.3
500	2	1000	2.8	26	36.1
600	2	1200	2.8	28	38.9
650	1	650	1.4	529	40.3
700	1	700	1.4	30	41.7
800	2	1600	2.8	32	44.4
900	1	900	1.4	33	45.8
976	1	976	1.4	34	47.2
1000	5	5000	3.9	39	54.2
1162	1	1162	1.4	40	55.6
1200	1	1200	1.4	41	56.9
1600	1	1600	1.4	43	59.7
2000	2	4000	2.8	45	62.5
2500	1	2500	1.4	46	63.9
3000	2	6000	2.8	48	66.7
3520	1	3520	1.4	49	68.1
3800	1	3800	1.4	50	69.4
3900	1	3900	1.4	51	70.8
4000	2	8000	2.8	53	73.6
5250	1	5250	1.4	57	79.2
5754	1	5754	1.4	58	80.6

Table B-14. continued

6000	1	6000	1.4	59	81.9
6650	1	6650	1.4	60	83.3
8000	2	16000	2.8	62	86.1
000	1	9000	1.4	63	87.5
10000	1	10000	1.4	64	88.9
12000	1	12000	1.4	65	90.3
1600	1	1600	1.4	66	91.7
20000	1	20000	1.4	67	93.7
24386	1	24386	1.4	68	94.4
25000	2	50000	2.8	70	97.2
34000	1	34000	1.4	71	97.6
42000	1	42000	1.4	72	100
		325218			

Production quantity =325,218 bushels Frequency Missing = 17

As the preceding data show, 72 producers listed their production of apples. From question A-2 it may be recalled that 8 of the 90 respondents considered themselves to be mainly marketers, with little production. Thus, only 10 producers failed to respond to this question. These 72 producers had production totaling 325,218 bushels. This total represented just over 11% of Ohio's 1990 population.

B-14. (continued)

Several of the 90 apple producers were involved in the production of other fruit crops. These were as follows:

Grapes	:	10 producers with acreage ranging from .1 acre to 10 acres.
Peaches	:	221 producers with acreage ranging from .5 to 60 acres.
Plums	:	11 producers with acreage ranging from .1 acre to 5 acres.
Pears	:	10 producers with acreage ranging from .1 acre to 5 acres.
Cantaloupes	:	2 producers with 2 and 6 acres respectively.
Muskmelon	:	2 producers with 5 acres.
Raspberries	:	3 producers with acreage ranging from .1 acre to .7 acre.
Strawberries	:	5 producers with acreage ranging from .3 acre to 2.5 acres.
Cherries	:	5 producers with acreage ranging from 1.5 to 3 acres.
Pumpkin	:	1 producer with 3 acres.
Christmas Trees	:	1 producer with .8 acres.

There were no apple businesses producing fruit commodities which are not listed here.

SECTION C: MARKETING

C-1. Are any of your commodities sold through contracts to processors:

Six producers indicated sales to processors through contracts. As might be expected for apple producers, all six producers listed apples as commodity sold through contracts.

C-2. Please describe your marketing of individual fruit or vegetable commodities.

As shown in Section B-13, not enough fruit businesses are involved in the production of a given vegetable crop to make an average price meaningful. This is especially true with respect to a given marketing outlet. For example, even though 15 business reported sweet corn sales, these sales were distributed among four outlets: Wholesale/Distributors; Retail Farm Markets: Farmers Markets: and Roadside Markets. With a maximum of four businesses reported sales for a given outlet on average price per outlet is not meaningful. With the exception of apples, for which average prices are reported, the other fruit crops also had too few responses to make average prices meaningful.

C-3. How far is your farm or market from an urban population center of:

A. 25,000 to 50,000 persons

Of the 82 businesses responding to this question, the maximum distance for any business amounted to 50 miles. Eighteen miles were the average distance.

B. 100,000 or more persons?

Of the 70 businesses responding to this question, the maximum distance for any business amounted to 90 miles. Forty miles were the average distance.

SECTION D: Farm Financial Record Systems

D-1. Do you use or subscribe to a sevice to keep some (or all) of your business records:

Of the 88 businesses responding to this question, only 14 (16%) used or subscribed to a service for record keeping.

All 14 of these businesses identified accountants as the type of service used.

D-2. Aside from this service, do you keep a farm records workbook, general ledger or use some other method to record the farm's financial activities?

Of the 87 businesses responding to this question, 79 (91%) indicated the use of other methods for recordkeeping.

D-3. Who is primarily responsible for keeping these financial records?

For the 77 businesses responding to this question, the responses were as follows: 66 (85%) of the 78 businesses responding indicated Manual Record System; 7 (9%) indicated both Manual and Computer Bared Components; and 5 (6%) indicated Computer-Based Record System.

D-5. Are your financial records based on single or double-entry accounting methods?

Responses were as indicated below.

	Number	Percent
Single-Entry Accounting	50	66.7
Double-Entry Accounting	15	20.0
Don't Know	10	13.3
Total	75	100.0

Fifteen businesses did not respond to the question.

D-6. If your financial records are computer based, which of the following best describe your system.

Ten businesses responded to this question. Three of these identified their Computer Based system as: General Business Accounting Software; Three identified Accounting Package Designed For Farm Firms; Two identified Accounts on Electronic Spreadsheets; and two identified Database Management Software. Note that these responses are consistent with D-4, in which 12 businesses identified their financial record systems as either Computer-Based or partly Computer-Based and Manual.

D-7. Do you use a computer in any aspect of your farm business?

	Number	Percent
No	71	80.7
Yes	17	19.3
Total	88	100.00

Note that two businesses did not respond to the questions. Those responding, however, reveal that computers do not enjoy widespread use among apple businesses.

D-8 through D-11, These questions pertain to the purchase and use of computers.

Summary information is not provided for questions D-8 through D-11 because of the limited number of businesses using computers. That is, the spareness of the data make summary informational most meaningless.

D-12. Indicate whether you use each of the following information sources and indicate how important each is for marketing decisions.

	IS THIS SOURCE USED (NUMBER)		IMPORTANCE LOW HIGH (PERCENT ANSWERING YES)				
	NO	YES	1	2	3	4	5
OTHER VEGETABLE PRODUCERS	89	0	0	0	0	0	0
OTHER FRUIT PRODUCERS	12	72	7.0	9.9	32.4	23.9	26.8
COOPERATIVE EXTENSION SERVICE	28	56	16.7	7.4	27.8	24.1	24.1
RADIO, T.V. & NEWSPAPERS	49	33	27.8	19.4	22.2	19.4	11.1
SPECIALIZED MAGAZINES (E.G., FRUIT GROWERS NEWS, VEGETABLE GROWERS NEWS)	17	65	6.5	21.0	40.3	14.5	17.7
OTHER PROFESSIONALS (E.G., SALESMAN, LENDER, CPA, OR BROKERAGE FIRM)	63	19	36.4	18.2	22.7	18.2	4.5
OTHERS	58	18	25.0	5.0	25.0	25.0	20.0

As the above data show, most apple businesses use Other Fruit Producers, Specialized Magazines and the Cooperative Extension Service for marketing information. These sources also received high rankings in terms of their importance for marketing decisions. For example, more than 50% of producers ranked other producers as either 4 or 5.

D-13. Of the information sources listed in D-12, which do you find most useful when making marketing decisions:

As the numbers below indicate, apple businesses consistently ranked their first and second most useful sources of information. No business attempted a ranking of its third most useful source. As one would have expected, Other Fruit Producers were ranked most useful by the largest number of businesses.

	MOST USEFUL	SECOND MOST USEFUL	THIRD MOST USEFUL
OTHER VEGETABLE PRODUCERS	3	60	0
OTHER FRUIT PRODUCERS	31	21	0
COOPERATIVE EXTENSION SERVICE	6	46	0
RADIO, T.V. AND NEWSPAPERS	7	6	0
SPECIALIZED MAGAZINES (E.G., FRUIT GROWERS NEWS, VEGETABLE GROWERS NEWS, ETC.	13	16	0
OTHER PROFESSIONALS (E.G., SALESMAN, LENDER, CPA, OR BROKERAGE FIRM)	6	3	0
OTHERS	6	0	0
TOTAL	72	68	0

D-14. How would you describe your current marketing information?

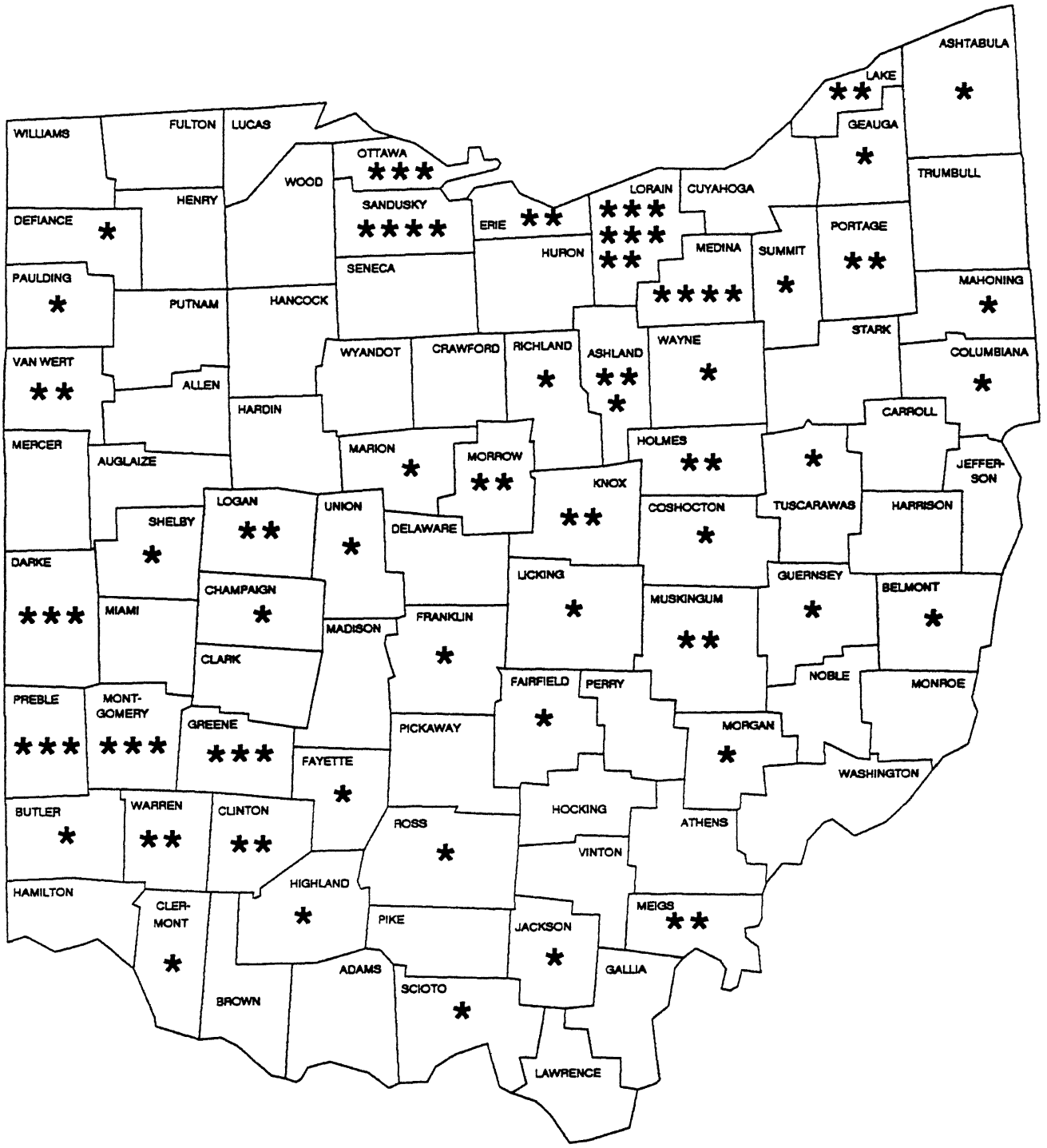
	RESPONSES	PERCENT
ADEQUATE	53	63.9
NOT ADEQUATE	19	22.9
DON'T KNOW	11	13.3
TOTAL	83	100.0

As the above responses show, about 64% of 83 apple businesses that responded to this question consider their marketing information to be adequate; 23% consider their information to be inadequate; and 13% were uncertain as to whether their marketing information was adequate or inadequate.

SECTION E:

E-1. In what county is your business primarily located?

The asterisks on this map represent the county locations for 86 of 90 apple businesses which responded to the survey. Four businesses did not reveal their location.



E-2. Which of the following best describes this farm business?

	NUMBER	PERCENT
INDIVIDUALLY OPERATED	71	80.7
PARTNERSHIP OR CORPORATION	16	18.2
ESTATE OF TRUST	0	0.0
HIRED FARM MANAGER	0	0.0
OTHER	1	1.1
TOTAL	88	100.0

E-3. If this is a partnership or other multiple-owner business, how many owners are there?

Only 15 business persons responded to this question. Eight of these businesses had 2 owners; four, 3 owners; one, four owners; one 6, owners; and one, 7 owners.

E-4. What is our age?

Age of respondents ranged from 28 to 86. The average age for operators of apple businesses was 55.7 years of age.

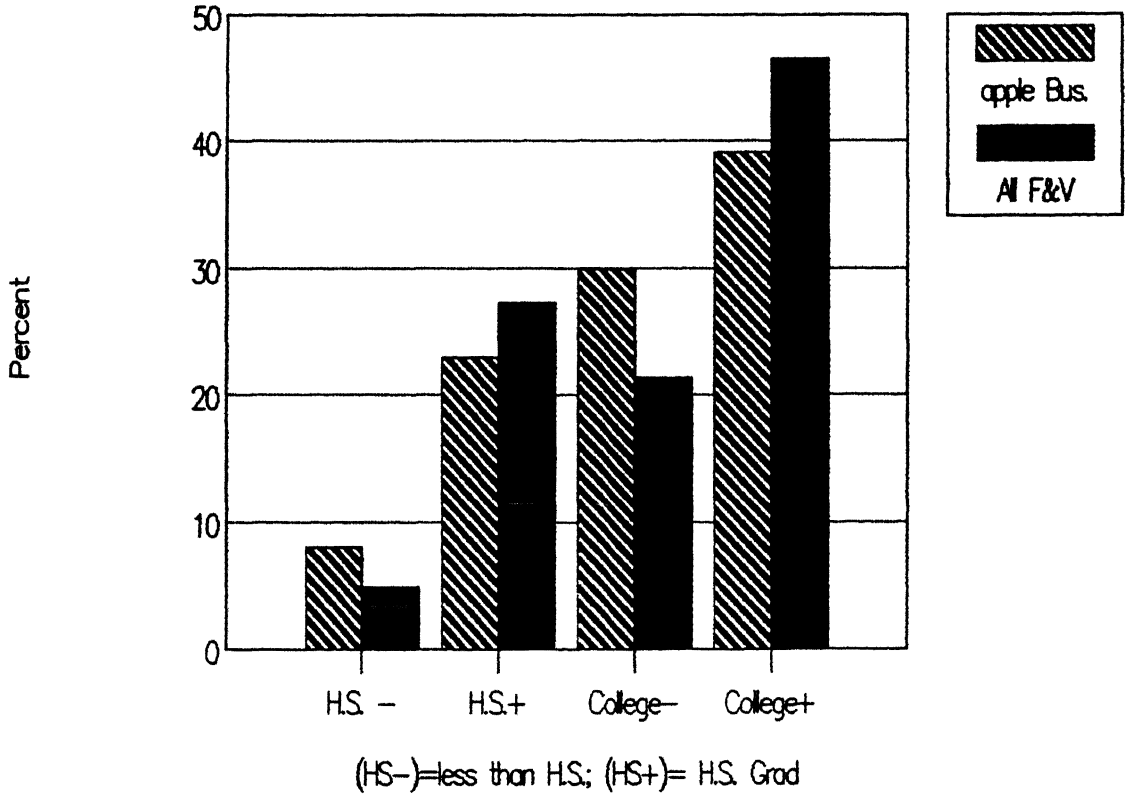
E-5. Are you male or female?

Eighty four of the operators were male and 5 were female. There was one missing observation.

E-6. What is the highest level of education that you attained?

A comparison of the larger sample of 290 fruit and vegetable businesses with the 90 apple businesses shows that a larger percentage of business operators in the all Fruit and Vegetable sample obtained a college education than did operators of apple businesses.

Educational Attainment of Apple and All F&V Businesses



E-7. About how many weeks per season and hours per week did you and your spouse work on the farm or business in 1990?

Season	WEEKS PER SEASON
Spring	Seventy-three businesses responded to this question. Seventy-six percent (56 businesses) of those completing the questionnaire indicated they work the full 12-13 weeks of the season. The average was 11.3 weeks. These business owners indicated that their spouses are less involved in the business. For example, 24 spouses did not work a single week during the Spring season. For the season, spouses worked an average of 4 weeks.
Summer	Seventy-three business owners also responded to this question for the Summer season. About the same number (57 owners) as for Spring indicated that they worked the full 12-13 weeks of the season. Average number of weeks worked amounted to 11.5 weeks. For the Summer season, these owners indicated that their spouses were employed less than they were in the business. Fifteen spouses did not work a single week during the season and the average amounted to 6.2 weeks.
Fall	Seventy-two business owners responded to this question regarding work during the Fall season. Sixty percent of these owners (43) indicated that they worked the full 12-13 weeks of the season. Average number of weeks worked amounted to 10.1 weeks. For the Fall season, these owners indicated that their spouses worked fewer weeks than they worked in the business. Forty-four spouses worked during this season, and their average number of weeks amounted to 8.9 weeks.
Winter	Seventy-two business owners responded to this question regarding work during the Winter season. A large percentage of theses owners (59%) worked the full 12-13 weeks of the season. Average number of weeks worked amounted to 8.47 for the season. These owners indicated that none of their spouses were involved in the business during the Winter season.

Season	HOURS PER WEEK
Spring	Sixty-eight business owners responded to this question regarding the number of hours worked during the Spring season. Hours worked range from a low of 5 to a high of 85. Average number of hours worked amounted to 37.7 hours. Spouses worked an average of 13.2 hours per week, and these hours ranged from a low of 2 for some spouses to a high of 60 for others.

Summer — Sixty-eight business owners also responded to this question about work hours for the Summer season. While the range of hours worked were the same as for Spring, the average number of hours worked was higher than for Spring, averaging 42.3 hours. Spouses worked an average of 24.5 hours per week during this Summer season, and their hours ranged from a low of 1 for some to a high of 90 for others.

Fall — Sixty-eight business owners also responded to this question about work hours for the Fall season. Hours worked ranged from a low of 10 for some owners to a high of 85 for others. The average number of hours worked amounted to 45.6 hours per week and their hours ranged from a low of 2 for some to a high of 82 for others.

Winter — Sixty-seven business owners responded to this question regarding hours of work for the Winter season. Hours worked ranged from a low of 1 for some to a high of 80 for others. The average number of hours worked amounted to 30.9 per week. Spouses worked an average of 12 hours per week and their hours ranged from a low of 5 for some to a high of 60 for for others.

E-8. Do you work away from the farm or business?

	NUMBER	PERCENT
NO	56	65.1
YES, SEASONALLY	3	3.5
YES, YEAR AROUND	27	31.4
	86	100.0

Frequency Missing = 4

As the responses above show, most business owners do not work away from the business. Only 30 of the 86 business owners worked away from the business. This suggests that few of the owners consider their business to be a part-time operation.

E-9. Does your spouse work away from the farm or business?

	NUMBER	PERCENT
NOT MARRIED	9	10.7
NO	45	53.6
YES, SEASONALLY	7	8.3
YEAR, YEAR AROUND	23	27.4
Total	84	100.0

Frequency Missing = 6

As the data above show, spouses are employed outside the business with a slightly higher degree of frequency than the owners. That is, when one considers the fact that 9 out the 84 respondents were not married, 30 of 75 (40%) is much higher than 30 of 86 (35%). This suggest that many spouses are employed outside the business to supplement the business income.

E-10. If you sold at auction all business assets, what would be the total receipts (market value). Include all business assets owned by all business partners:

Machinery

Only 6 businesses responded to this question about machinery. This suggests that machinery is not a major part of apple businesses.

Land/Buildings

Fifty-six businesses responded to this question about the market value of their land and buildings. Those responding indicated a market value ranging from $5,000 to $2,000,000. The average market value was $249,803.

Livestock

Sixty-two owners responded to this question and 58 of these indicated no ownership of livestock. The other four owners indicated a market value of their livestock ranging from $1,000 to $80,000.

E-11. What percentage of your business assets is financed by debt? (Total Business Debt/Total Assets) x 100.

Forty-nine of the 68 businesses responding to this question indicated that none of their business assets were financed by debt. The other 19 indicated percentages from 4 to 66. The average for these 19 businesses amounted to 34.9 percent.

E-12. What was the amount of business depreciation for 1990?

Fifty businesses responded to this question. Depreciation ranged from a low of 0 for 7 businesses to a high of $100,00 for 1 business. The average amount of depreciation was $7,711.

E-13. What was your expenditure for pesticides and herbicides (including organic materials) in 1990?

Sixty-one businesses responded to this question. Expenditures for pesticides and herbicides ranged from a low of $75 to a high of $100,000. Average expenditures amounted to $6,343.

E-14. What was your expenditure for fertilizers and lime in 1990?

Fifty-nine businesses responded to this question. Expenditures ranged from a low of $0 for 11 businesses to a high of $60,000 for 1 business. Average expenditures for all businesses amounted to $2,112.

E-15. What was your gross business income for 1990?

Fifty-five businesses responded to this question. Business income ranged from a low of $0 for 2 businesses to a high of $2,000,000 for 1 business. Average business income amounted to $122,618.

E-16. What was your net business profit or loss for 1990?

Of the 53 businesses responding to this question, 21 indicated a business loss ranging from $222 to $64,624. The other 31 businesses indicated a business profit ranging from $0 to $76,546.

E-17. What was your family's adjusted gross income for 1990?

Forty-eight businesses responded to this question. One business had a negative gross income of $3,154. The other 47 businesses had adjusted gross income ranging from $1000 to $244,023. Average adjusted gross income amounted to $40,457.

**** Again, we thank you for participating in this survey. ****